

Docket No.: 50212-336

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

Tomohiro ISHIHARA, et al.

Serial No.:

Group Art Unit:

Filed: January 04, 2002

Examiner:

For: METHODS AND APPARATUS FOR DRAWING OPTICAL FIBER

#4
4402



INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
Washington, DC 20231

Dear Sir:

In accordance with the provisions of 37 C.F.R. 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached form PTO-1449. It is respectfully requested that the references be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement is being filed within three months of the U.S. filing date OR before the mailing date of a first Office Action on the merits. No certification or fee is required.

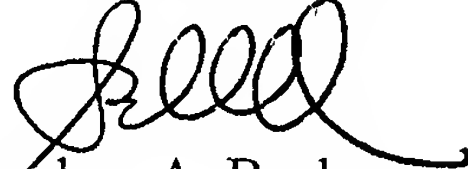
Each non-English language reference was cited in a corresponding foreign application search report or office action and its relevance discussed therein. A copy of the foreign search report or office action, together with an English language version thereof, is attached for the Examiner's information.

Serial No.:

The relevance of one reference, Japanese Patent Application No. 4-59631, is discussed in the present specification.

Respectfully submitted,

MCDERMOTT, WILL & EMERY


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INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP00/04353

A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl⁷ C03B37/027
C03B37/029

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl⁷ C03B37/027
C03B37/029

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho 1926-1996 Toroku Jitsuyo Shinan Koho 1994-2000
Kokai Jitsuyo Shinan Koho 1971-2000 Jitsuyo Shinan Toroku Koho 1996-2000

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	JP, 10-218635, A (Nippon Telegr. & Teleph. Corp. <NTT>), 18 August, 1998 (18.08.98), Par. Nos. [0003] to [0006], [0012] (Family: none)	1-6
A	JP, 10-25127, A (Nippon Telegr. & Teleph. Corp. <NTT>), 27 January, 1998 (27.01.98), Par. Nos. [0003] to [0021] (Family: none)	1-6
X	JP, 2-172840, A (The Furukawa Electric Co., Ltd.), 04 July, 1990 (04.07.90), page 2, lower right column, lines 11 to 18 (Family: none)	3
X	JP, 2-164738, A (The Furukawa Electric Co., Ltd.), 25 June, 1990 (25.06.90), Claims; Fig. 4 (Family: none)	3

☐ Further documents are listed in the continuation of Box C.

☐ See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not
considered to be of particular relevance
"E" earlier document but published on or after the international filing
date
"L" document which may throw doubts on priority claim(s) or which is
cited to establish the publication date of another citation or other
special reason (as specified)
"O" document referring to an oral disclosure, use, exhibition or other
means
"P" document published prior to the international filing date but later
than the priority date claimed

"T" later document published after the international filing date or
priority date and not in conflict with the application but cited to
understand the principle or theory underlying the invention
"X" document of particular relevance; the claimed invention cannot be
considered novel or cannot be considered to involve an inventive
step when the document is taken alone
"Y" document of particular relevance; the claimed invention cannot be
considered to involve an inventive step when the document is
combined with one or more other such documents, such
combination being obvious to a person skilled in the art
"&" document member of the same patent family

Date of the actual completion of the international search
17 August, 2000 (17.08.00)

Date of mailing of the international search report
29 August, 2000 (29.08.00)

Name and mailing address of the ISA/
Japanese Patent Office

Authorized officer

Facsimile No.

Telephone No.

Translation

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference FP00-0015-00	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/JP00/04353	International filing date (day/month/year) 30 June 2000 (30.06.00)	Priority date (day/month/year) 05 July 1999 (05.07.99)
International Patent Classification (IPC) or national classification and IPC C03B 37/027, 37/029		
Applicant SUMITOMO ELECTRIC INDUSTRIES, LTD.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 4 sheets, including this cover sheet.
- ☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).
- These annexes consist of a total of _____ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☒ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 18 October 2000 (18.10.00)	Date of completion of this report 05 April 2001 (05.04.2001)
Name and mailing address of the IPEA/JP	Authorized officer
Facsimile No.	Telephone No.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP00/04353

I. Basis of the report

1. With regard to the **elements** of the international application:*

- ☒ the international application as originally filed
- ☐ the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the claims:
 pages _____, as originally filed
 pages _____, as amended (together with any statement under Article 19
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the drawings:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____
- ☐ the sequence listing part of the description:
 pages _____, as originally filed
 pages _____, filed with the demand
 pages _____, filed with the letter of _____

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

- These elements were available or furnished to this Authority in the following language _____ which is:
- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets/fig _____

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).**

* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

** Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP00/04353

IV. Lack of unity of invention

1. In response to the invitation to restrict or pay additional fees the applicant has:

- ☐ restricted the claims.
- ☐ paid additional fees.
- ☐ paid additional fees under protest.
- ☐ neither restricted nor paid additional fees.

2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose, according to Rule 68.1, not to invite the applicant to restrict or pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rules 13.1, 13.2 and 13.3 is

- ☐ complied with.
- ☒ not complied with for the following reasons:

The common concept of claims 1, 3, and 4 is heat-drawing an optical fiber preform using a drawing furnace, which was known in the relevant technical field prior to the submission of this application.

The "special technical feature" of claim 1 pertains to heat-drawing an optical fiber preform with the furnace tube temperature held below 1800°C. The "special technical feature" of claim 3 pertains to heat-drawing an optical fiber preform so that the taper angle of the optical fiber preform's meniscus part is 19°C or less in the drawing furnace. The "special technical feature" of claim 4 pertains to the fact that the length of the heater's heating part in the drawing direction is more than 6x the inner diameter of the furnace core tube.

There is no technical relationship among those inventions involving one or more of the same or corresponding technical features, so they do not appear to be linked so as to form a single general inventive concept.

4. Consequently, the following parts of the international application were the subject of international preliminary examination in establishing this report:

- ☒ all parts.
- ☐ the parts relating to claims Nos. _____

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/JP00/04353

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1,2,4-6	YES
	Claims	3	NO
Inventive step (IS)	Claims	1,2,4-6	YES
	Claims	3	NO
Industrial applicability (IA)	Claims	1-6	YES
	Claims		NO

2. Citations and explanations

Document 1: JP, 2-172840, A (THE FURUKAWA ELECTRIC CO., LTD.), 4 July 1990

The subject matter of claims 1, 2, and 4-6 is not disclosed in any of the documents cited in the ISR, and appears to involve novelty. In particular, heat-drawing with the furnace core tube temperature held below 1800°C and making the length of the heater's heating part in the drawing direction more than 6x the inner diameter of the furnace core tube are not described in any of the documents.

The subject matter of claim 3 does not appear to involve novelty on account of the aforesaid document 1 cited in the ISR. Document 1, page 2, lower right column, lines 11-18 says that the taper part below the preform until the place where it reaches the target fiber diameter is very long, specifically that it's about 300 mm where the preform diameter is 20-40 mm and is about 600 mm where the diameter is 100 mm. This discloses that the angles of these taper parts are drawn to an angle smaller than 19°.